

IN THE CLAIMS:

1. (Currently Amended) An apparatus having a memory operable with a ~~virtualised~~ virtualized RAID controller to determine an optimum I/O configuration by testing performance characteristics of a plurality of I/O operations wherein ~~each of~~ said I/O operations ~~includes~~ comprise writing a block of data to the RAID controller, and wherein said I/O configuration includes a data length and a data alignment.
2. (Original) The apparatus of claim 1 wherein said memory is a cache.
3. (Original) The apparatus of claim 1 wherein said memory is an input buffer.
4. (Original) The apparatus of claim 1 wherein said memory is an output buffer.
5. (Original) The apparatus of claim 1 wherein said performance characteristic is a response time.
6. (Currently Amended) A method for operating an apparatus having a memory operable with a ~~virtualised~~ virtualized RAID controller, comprising ~~the steps of~~:
 - performing a plurality of I/O operations wherein said I/O operations include writing a block of data to the RAID controller;
 - testing a performance characteristic of said plurality of I/O operations; and
 - responsive to said step of testing, setting an optimal I/O configuration for subsequent I/O operations wherein said I/O configuration includes a data length and a data alignment.
7. (Original) The method of claim 6 wherein said method is carried out when the RAID controller is otherwise idle.
8. (Original) The method of claim 6 wherein said memory is a cache.
9. (Original) The method of claim 6 wherein said memory is an input buffer.
10. (Original) The method of claim 6 wherein said memory is an output buffer.

11. (Original) The method of claim 6 wherein said performance characteristic is a response time.

12. (Original) A computer program product comprising computer program code stored on a computer readable storage medium which, when executed on a data processing system, instructs the data processing system to carry out the method as claimed in claim 6.

13. (New) A storage appliance comprised of a first interface for being coupled to a host and a second interface for being coupled to a virtual storage device, said storage appliance further comprising a controller operating in accordance with a computer program comprised of program instructions stored on a controller readable media, said program instructions comprised of:

first program instructions to generate a set of parameter-tuples, each parameter-tuple of the set comprising a data unit and a different combination of a data size parameter and a block parameter;

second program instructions, responsive to each parameter-tuple in the set of parameter-tuples, to perform a write operation to the virtual storage device with the parameter-tuple as write parameters, and to make and record a performance measurement of the write operation; and

third program instructions to identify a parameter-tuple associated with a write operation having a best recorded performance measurement, and to configure the storage appliance such that a value of a stripe size attribute associated with the virtual storage device is set to the value of the data size parameter of the identified parameter-tuple, and such that a value of a stripe alignment attribute associated with the virtual storage device is set to the value of the block parameter of the identified parameter-tuple.

14. (New) A storage appliance as in claim 13, where configuring the storage appliance results in the storage appliance performing stripe aligned write operations using a storage appliance memory as a cache.

15. (New) A storage appliance as in claim 13, where making a performance measurement comprises measuring an amount of time required to complete the write operation.

16. (New) A storage appliance as in claim 13, where identifying the parameter-tuple associated with the write operation having the best recorded performance measurement comprises identifying the write operation that takes a least amount of time to complete.
17. (New) A storage appliance as in claim 13, where said virtual storage device comprises a RAID storage system that includes a RAID controller coupled to a plurality of storage devices.
18. (New) A storage appliance as in claim 13, where said storage appliance comprises a part of a switch of a storage area network.
19. (New) A storage appliance as in claim 13, where at least said second and third program instructions are executed when said storage appliance is otherwise idle.
20. (New) A storage appliance as in claim 13, further comprising a memory for being coupled to said virtual storage device, where said memory comprises a cache.
21. (New) A storage appliance as in claim 13, further comprising a memory for being coupled to said virtual storage device, where said memory comprises an input buffer.
22. (New) A storage appliance as in claim 13, further comprising a memory for being coupled to said virtual storage device, where said memory comprises an output buffer.
23. (New) A storage appliance comprised of a first interface for being coupled to a host and a second interface for being coupled to a virtual storage device, said storage appliance further being comprised of means for generating a set of parameter-tuples, each parameter-tuple of the set comprising a data unit and a different combination of a data size parameter and a block parameter; means, responsive to each parameter-tuple in the set of parameter-tuples, for performing a write operation to the virtual storage device with the parameter-tuple as write parameters, and for making and recording a performance measurement of the write operation; and means for identifying a parameter-tuple associated with a write operation having a best recorded performance measurement, and for configuring the storage appliance such that a value of a stripe size attribute associated with the virtual storage device is set to the value of the data

size parameter of the identified parameter-tuple, and such that a value of a stripe alignment attribute associated with the virtual storage device is set to the value of the block parameter of the identified parameter-tuple.

24. (New) A storage appliance as in claim 23, where operation of said means for configuring the storage appliance results in the storage appliance performing stripe aligned write operations using a storage appliance memory as a cache.

25. (New) A storage appliance as in claim 23, where said means for making a performance measurement measures an amount of time required to complete the write operation.

26. (New) A storage appliance as in claim 23, where said means for identifying the parameter-tuple associated with the write operation having the best recorded performance measurement operates to identify the write operation that takes a least amount of time to complete.

27. (New) A storage appliance as in claim 23, where said virtual storage device comprises a RAID storage system that includes a RAID controller coupled to a plurality of storage devices.

28. (New) A storage appliance as in claim 23, where said storage appliance comprises a part of a switch of a storage area network.